

**Table 1: Summary Chart of the Requirements for the CISE and ECE Doctoral Degree Programs**

Minimum Number of Credit Hours of Coursework Required After the B.S. Degree	Technical Courses		48 credit hours Core courses	30 credit hours to provide broad knowledge in the student's field of doctoral work. For CISE, 30 credit hours must include CIS 675, CIS 657, CIS 655 and CIS 623.
				18 credit hours, 700-level or above, to provide depth in the student's research area
	Non-Technical Courses		4 credit hours	3 credit hours of presentational speaking to equip doctoral students with the ability to deliver effective technical presentations (e.g., CRS 625 – Oral Communication Skills for Engineers).
				1 credit hour of fundamentals of research (ECS 691) to provide students with fundamental skills needed in their pursuit of a doctoral degree within the context of a small research project.
<i>500-level courses cannot be used toward Program of Study</i>				
<b>Total</b>			<b>52 credit hours</b>	
Examinations:  • Objectives • Timeline for Passing These Examinations After Starting the Doctoral Program (all students start in the fall semester)	Qualifying Examination (QE)	Part 1 (Written)	Objective: To ensure that students have mastered the fundamentals pertinent to their doctoral program of study and possess the mathematical maturity necessary to undertake doctoral research.	Spring semester of 1st year
		Part 2 (Oral)	Objective: To ascertain that the student is ready to engage in research.	Spring semester of 2 <sup>nd</sup> year
	Proposal Defense (Oral)		Objective: To demonstrate suitable selection of a dissertation topic and adequate preparation for said research.	4 years (2 after passing the QE):
	Dissertation Defense (Oral)		Objective: To give final certification of doctoral dissertation.	Expected - 4 to 6 years:
Timeline and Objective for Colloquium Presentation	Students give at least one presentation at the Department Colloquium Series prior to the final dissertation defense to communicate their research results to the faculty and students of the Department. Fall semester: before Dec. 1; Spring semester: before May 1.			
Assurance of a Comprehensive Education	The topics covered in QE Part 1 together with the requirement that students demonstrate competence by completing coursework in at least three areas related to their Ph.D. program ensure that students have broad knowledge in their field of doctoral work.			

*Note:* The basic structure of the requirements for both doctoral programs is the same. What differentiates them are the details, namely: (1) The list of topics in which students must demonstrate competencies by completing coursework, and (2) The topics covered in the written Qualifying Examination Part I.